the semiconductor layer at an interface of the semiconductor layer and the set of highly conductive semiconducting layers.

**7**. The method of claim **1**, wherein the set of highly conductive semiconducting layers are delta doped.

**8**. The method of claim **1**, wherein the set of highly conductive semiconducting layers are formed of group III nitride materials, and wherein the grading results in a decreasing aluminum molar fraction in a direction away from the set of contact regions.

**9**. The method of claim **1**, wherein the grading is configured to avoid inducing an accumulation of opposite carriers at the set of contact regions.

**10**. The method of claim **1**, wherein the set of semiconductor layers of the device heterostructure are formed of group III nitride materials.

**11**. A device comprising:

a device heterostructure including:

an ohmic contact to a semiconductor layer in a set of semiconductor layers of the device heterostructure, wherein the ohmic contact includes:

a set of highly conductive semiconducting layers formed on a set of contact regions of a surface of the semiconductor layer, wherein the set of highly conductive semiconducting layers include a molar fraction of at least one element of a material forming the set of highly conductive semiconducting layers graded with respect to a distance from the set of contact regions, and wherein the set of highly conductive semiconducting layers are lattice matched with the semiconductor layer at an interface of the semiconductor layer and the set of highly conductive semiconducting layers; and

an ohmic metal located on a surface of the set of highly conductive semiconducting layers; and

a protruding region formed on at least one region of the surface of the semiconductor layer distinct from the set of contact regions.

**12**. The device of claim **11**, wherein the ohmic contact is formed without etching the semiconductor layer, wherein the forming includes forming the ohmic contact on the set of contact regions after formation of the protruded region, wherein the forming the ohmic contact is performed at a processing temperature lower than a temperature range within which a quality of a material forming any one of the set of semiconductor layers in the device heterostructure is damaged.

**13**. The device of claim **11**, wherein the semiconducting layers of the heterostructure are formed of group III nitride materials.

**14**. The device of claim **11**, wherein the set of highly conductive semiconducting layers are delta doped.

**15**. The device of claim **11**, wherein the set of highly conductive semiconducting layers are formed of group III nitride materials, and wherein the grading results in a decreasing aluminum molar fraction in a direction away from the set of contact regions.

**16**. The device of claim **11**, wherein the grading is configured to avoid inducing an accumulation of opposite carriers at the set of contact regions.

**17**. A device comprising:

a device heterostructure including:

an n-type group III nitride semiconductor layer;

an ohmic contact to the n-type group III nitride semiconductor layer, wherein the ohmic contact is located on a first surface of the semiconductor layer, wherein the ohmic contact includes:

a set of highly conductive group III nitride semiconducting layers, wherein the set of highly conductive semiconducting layers include a molar fraction of at least one element of a material forming the set of highly conductive semiconducting layers graded with respect to a distance from the set of contact regions, and wherein the set of highly conductive group III nitride semiconducting layers are lattice matched with the n-type group III nitride semiconductor layer at an interface of the n-type group III nitride semiconductor layer and the set of highly conductive group III nitride semiconducting layers; and

an ohmic metal located on a surface of the set of highly conductive group III nitride semiconducting layers; and

a protruded region located on the first surface of the n-type group III nitride semiconductor layer adjacent to the ohmic contact.

**18**. The device of claim **17**, the device heterostructure further comprising:

an active region located on the protruded region; and

a p-type contact located on the active region.

**19**. The device of claim **18**, wherein the active region is a light emitting active region.

**20**. The device of claim **17**, wherein the device is a transistor.

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